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[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1058; Project Identifier AD-2022-00256-T; Amendment 39-22340; AD 2023-03-15]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2021-07-09, which applies to all The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. AD 2021-07-09 required repetitively inspecting all trim air diffuser ducts or sidewall riser duct assemblies (collectively referred to as TADDs) for damage, including repetitive structural inspections of the center fuel tanks for damage, and performing applicable on-condition actions. Since the FAA issued AD 2021-07-09, the agency has determined that the existing requirements do not adequately address the unsafe condition. This AD continues to require repetitive inspections of the TADDs for damage, with revised compliance times, and repair if applicable. This AD also requires repetitive replacement of the TADDs and removes the structural inspections of the center fuel tanks. This AD also prohibits the installation of affected parts. This AD removes certain airplanes from the applicability. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at regulations.gov under Docket No. FAA-2022-1058; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

• For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet myboeingfleet.com.

• You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at regulations.gov under Docket No. FAA-2022-1058.

FOR FURTHER INFORMATION CONTACT: Nicole S. Tsang, Aerospace Engineer, Cabin Safety and Environmental Systems Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3959; email: nicole.s.tsang@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part

39 to supersede AD 2021-07-09, Amendment 39-21486 (86 FR 17899, April 7, 2021) (AD 2021-07-09). AD 2021-07-09 applied to all The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. The NPRM published in the *Federal Register* on September 8, 2022 (87 FR 54919). The NPRM was prompted by reports of sealant deteriorating on the outside of the center wing fuel tank and analysis showing that sealant may deteriorate inside the tank due to excess heat from TADDs. The NPRM was also prompted by reports indicating that the high temperature composite material TADD failed. AD 2021-07-09 requires replacing original fiberglass fabric material with high temperature composite material TADDs, repetitively inspecting the TADDs for damage, and as applicable inspecting the center wing fuel tank secondary fuel barrier coating and primary sealant for damage, and repairing damage. In the NPRM, the FAA proposed to continue to require repetitive inspections of the TADDs for damage, with revised compliance times, and repair if applicable. The NPRM also proposed to require repetitive replacement of the TADDs and remove the structural inspections of the center fuel tanks. In addition, this AD prohibits the installation of affected parts. The FAA is issuing this AD to address potential hot air leakage from original fiberglass fabric material or high temperature composite material TADD that can cause damage to the center wing fuel tank secondary fuel barrier coating and primary sealant, which can cause fuel leakage into an ignition zone, possibly resulting in a fire or explosion.

For information on the procedures and compliance times, see the service information at regulations.gov under Docket No. FAA-2022-1058.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from four commenters. Commenters included Air Line Pilots Association, International (ALPA) who supported the NPRM without change,

and an individual whose comment is outside the scope of this rulemaking. The FAA received additional comments from Boeing and another commenter. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request for Clarification on Credit for Previous Actions

A commenter asked if an operator can claim full credit against the proposed AD if the operator with Group 2 airplanes performed Boeing Service Bulletin 747-21A2577-00 and conducted the TADD replacement associated with certain comments from AD 2021-07-09 in order to extend the inspection interval.

The FAA infers the commenter is referring to the FAA's response to a comment in AD 2021-07-09. That response states as follows:

> After initial installation of high temperature TADDs, operators may avoid repeat inspections at 1,200 FH intervals by installing new high temperature TADDs at each 16,000 FH interval, without an alternative method of compliance (AMOC) or additional rulemaking, as long as required actions are completed at that interval.

The FAA infers the commenter is requesting the same allowance from the FAA's response to the comment in AD 2021-07-09 to replace the TADD in lieu of performing repetitive inspections of the TADD at 1,200-flight-hour intervals. The FAA provides the following clarifications of the AD requirements. This AD requires operators to perform repetitive inspection of the TADD, report any TADD damages to Boeing, and replace the TADD at 16,000-flight-hour intervals. This AD does not provide an option for a TADD to continue in service after 16,000 flight hours.

The proposed AD would have required Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 1, dated March 9, 2022. This AD has been revised to require Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023. However, paragraph (j) of this AD provides credit for actions done before the effective date of the AD using Boeing Alert Requirements Bulletin 747-21A2577 RB, dated February 18, 2020; or Revision 1, dated March 9, 2022.

Request for Change in Applicability

Boeing requested that the FAA revise paragraph (c), "Applicability," of the proposed AD to remove the following Model 747 Large Cargo Freighters (LCF) airplanes: variable numbers RT631, RT743, RT876, and RT632. The listed LCF airplanes should not be applicable because the listed LCF airplanes do not have original fiberglass fabric material or high temperature composite material TADD.

The FAA agrees with the request for the reasons provided by the commenter. The FAA notes that paragraph 1.A., "Effectivity," of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023, specifically excludes line numbers 766, 778, 904, and 932 (variable numbers RT631, RT743, RT876, and RT632). The FAA revised paragraph (c) of this AD to limit the applicability to airplanes identified in Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023.

Request for Change to the Service Bulletins Cited

Boeing requested the FAA to reference Revision 2 instead of Revision 1 of Service Bulletin and Requirements Bulletin 747-21A2577. Revision 2 of this service information will address the issue of Appendix A and Appendix B not being in the RB.

The FAA agrees with Boeing's request. As stated previously, the FAA has revised this AD to require Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023. Revision 2 added the missing appendixes and introduces no other changes that affect compliance.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as

proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023. This service information specifies procedures for repetitive detailed inspections for damage of TADDs made of original fiberglass fabric material and high temperature composite material, repetitive replacement of TADDs, and repair of damaged TADDs. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Costs of Compliance

The FAA estimates that this AD affects 104 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Retained repetitive inspections (AD2021-07-09)	Up to 44 work-hours X $85 per hour = up to $3,740 per inspection cycle	$0	Up to $3,740 per inspection cycle	Up to $388,960 per inspection cycle
Repetitive TADD replacement	Up to 49 work-hours X $85 per hour = $4,165 per replacement cycle	Up to $12,000	Up to $16,165 per inspection cycle	Up to $1,681,160 per replacement cycle

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this AD.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive (AD) 2021-07-09, Amendment 39-21486 (86 FR 17899, April 7, 2021); and

b. Adding the following new AD:

2023-03-15 The Boeing Company: Amendment 39-22340; Docket No. FAA-2022-1058; Project Identifier AD-2022-00256-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2021-07-09, Amendment 39-21486 (86 FR 17899, April 7, 2021) (AD 2021-07-09).

(c) Applicability

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023.

(d) Subject

Air Transport Association (ATA) of America Code: 21, Air conditioning.

(e) Unsafe Condition

This AD was prompted by reports of sealant deteriorating on the outside of the center wing fuel tank and analysis showing that sealant could deteriorate inside the fuel tank due to excess heat from trim air diffuser ducts or sidewall riser duct assemblies (collectively referred to as TADDs), and by the determination that existing requirements do not adequately address the unsafe condition. The FAA is issuing this AD to address potential hot air leakage from original fiberglass fabric material or high temperature composite material TADDs that can cause damage to the center wing fuel tank secondary fuel barrier coating and primary sealant, which can cause fuel leakage into an ignition zone, possibly resulting in a fire or explosion.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified by paragraph (h) of this AD: At the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 747-21A2577, Revision 2, dated February 10, 2023, which is referred to in Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023.

(h) Exceptions to Service Information Specifications

(1) Where the Compliance Time column of the tables in the "Compliance" paragraph of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated

February 10, 2023, uses the phrase "the Revision 1 date of Requirements Bulletin 747-21A2577 RB," this AD requires using "the effective date of this AD."

(2) Where Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023, specifies contacting Boeing for repair instructions: This AD requires doing the repair before further flight using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(i) Parts Installation Prohibition

As of the effective date of this AD, no person may install an original fiberglass fabric material TADD assembly, having a part number listed in Appendix A of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023, on any airplane.

(j) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraph (j)(1) or (2) of this AD.

(1) Boeing Alert Requirements Bulletin 747-21A2577 RB, dated February 18, 2020, which was incorporated by reference in AD 2021-07-09.

(2) Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 1, dated March 9, 2022, which is not incorporated by reference in this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-

Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2021-07-09 are approved as AMOCs for the corresponding provisions of Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023, that are required by paragraph (g) of this AD.

(l) Related Information

For more information about this AD, contact Nicole S. Tsang, Aerospace Engineer, Cabin Safety and Environmental Systems Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3959; email: nicole.s.tsang@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Requirements Bulletin 747-21A2577 RB, Revision 2, dated February 10, 2023.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110 SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet myboeingfleet.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on February 25, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-04848 Filed: 3/9/2023 8:45 am; Publication Date: 3/10/2023]